

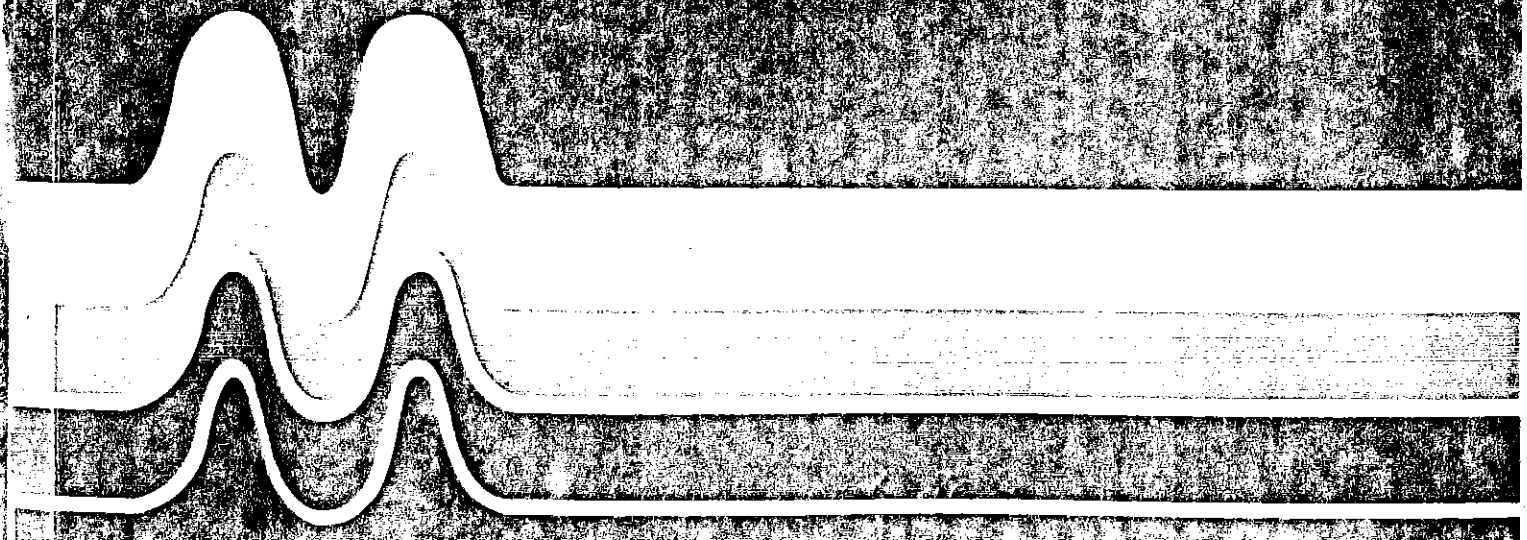
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PYODERMA GANGRENOSUM TREATED WITH HYBERBARIC OXYGEN

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SUMMARY

A 55 years old male patient diagnosed as pyoderma gangrenosum beginning on his lower extremities, at Medical faculty's Dermatology Department. All topical applications failed. Marked improvement was obtained with systemic pulse steroids and antibiotic therapies at the beginning but failed soon after. Lesions became infected and enlarged. After admission to our department, daily HBO and use of local occlusive zinc dressings (Mezinc) was applied on the outpatient basis. Improvement and subsequent healing of the lesions was observed within the first week. Patient was completely healed after 41 sessions of HBO and no recurrence observed during the six months follow-up. Investigations revealed no underlying pathology.

Key words : Pyoderma Gangrenosum, Hyberbaric Oxygen

INTRODUCTION

Pyoderma gangrenosum is first described by Brunstig in 1930 but the etiology has remained obscure yet. It is characterized by the undermining ulcers, frequently on the lower extremities of the persons who has ulcerative colitis, polyposis, regional ileitis and gastric ulcers. (Arnold O.J., 1990) Fifty percent of patients have underlying bowel diseases. J.C. Davis (1988) stated that % 80 of the cases have an underlying pathology, frequently collagen diseases or other diseases like leukemia (Idem et al., 1972), myeloid metaplasia (Callen J.P. et al., 1977), monoclonal gammopathy (Powell et al., 1983) and chronic active hepatitis (Byrne et al., 1976).

First a papulo-vesicle appears and becomes necrotic rapidly. An erythematous halo surrounds the ulcer. Ulcers are generally painful and satellite papules tend to fuse with the central ulcer. A thin atrophic scar forms at the central of the healing ulcers (Pery et al., 1957).

Treatment of the disease is empirical. There are many publications which state different treatment methods. Underlying pathology should be considered during the treatment. Local therapy with sulfadiazin ointment is helpful according to Arnold (1990). Perry and Brunstig (1957) advocated salicylazosulfapyridine usage in clearing the painful lesions. Sulfones are reported to be useful, also. (Newel et al., 1983) Clofazimine usage, 300-400 mg daily, is also reported to be useful. (Michaeksson et al., 1976). Azothioprine use according to Bryne (1976) has good results. Most common drug used for the treatment of pyoderma gangrenosum is corticosteroids. Intralesional steroid administration has been reported by Jennings (1983). Johnson et al found the methylprednisolone pulse therapy to be effective, but necessity of prolonged steroid therapy is a discouraging factor. Hyberbaric oxygen therapy is a treatment modality according to many authors. (Barr et al., 1972, Fuhrman D.L., 1975, Thomas et al., 1974, Wyrlic et al., 1978). Davis (1987) reported four successful, well documented cases which were prepared for skin grafting with the aid of hyberbaric oxygen therapy.

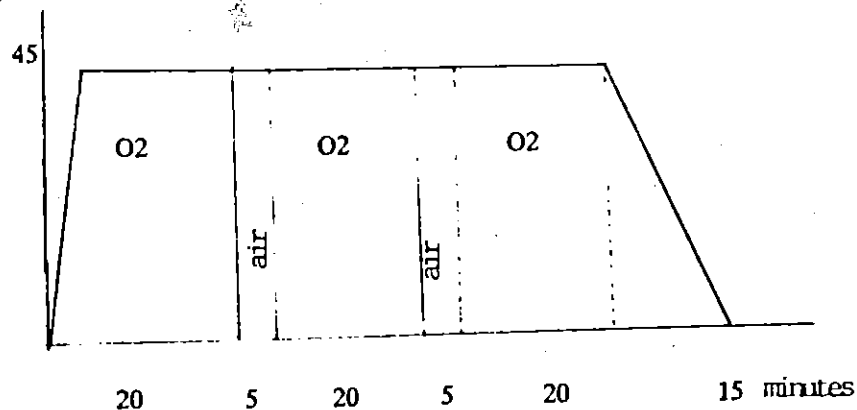
MATERIALS AND METHODS

Case : 55 years old male with two painful ulcer on the right ankle one ulcer on his left ankle persisting for the last five months. The smallest ulcer was 12 cm² in size and other two were between 15 -17 cm². History : Small red papules formed on the ankles and colored into black in a short period. He was sent to Istanbul University Dermatology Department by the dermatologist who has seen him first. Pyoderma gangrenosum was pre-diagnosed and tests were applied for underlying diseases. Blood counts revealed no pathology. Biochemical analysis showed no abnormality. Serum proteins and immune electrophoresis was normal. Urine analysis was normal. VDRL and RPR serologic tests were negative. Biopsy findings were in favor of Pyoderma gangrenosum. RF and ANA were negative.

He was diagnosed as Pyoderma gangrenosum and given steroids for three weeks. After the steroids he was given amoxicillin + clavulonic acid for another three weeks. The lesions got smaller in size and tended to heal. One week later, ulcers reoccurred and this time they were more painful and bigger size. He was given steroid therapy for another full month combined with the same antibiotics. Since no improvement was obtained, he was send to our clinic for HBO evaluation and was accepted as an outpatient at our department.

HBO therapy planned at 45 ft (20 min O₂ + 5 min Air) 3 periods 5 days a week in a multiplace chamber.

Figure 1



In repeated cultures, *Pseudomonas aeruginosa* was identified. Ciprofloxacin 750 mg x 2 P.O. was started for seven days according to antibiogram sensitivity test and continued for 23 days 500 mg x 2 P.O. daily. During his treatment other tests which could be in relation to an underlying pathology were performed. Shirmer test and tear breaking tests were normal. RF was negative, T4 was % 47 and % 19 in normal range; C3 was 87 mg/dl and C4 32,3 mg/dl. Complement system classical way activity was 255 CH50/ml, alternative way activity was 83 AH50/ml (slightly high). Circulating immun complexes (% 17) were found normal. Local wound care with Mezinc (Mölnlycke, Sweden) dressings were applied. After 41 HBO sessions all of the lesions had healed and covered by epithelium.

RESULTS AND DISCUSSION

Since the etiology of this disease is unknown, special care should be directed to underlying pathology and appropriate treatment may result at healing the ulcers. Hyperbaric oxygen is correcting the oxygen tension to normal levels in the hypoxic soft tissue wounds. This feature maintains a positive effect on ischemic wound by enhancing leucocyte bacterial killing and fibroblast - collagen support for capillary angiogenesis (Erlich et al., 1972; Hohn D.C., 1977). Therefore HBO therapy helps to control infection and improves healing process. In treating Pyoderma gangrenosum HBO should be considered in recurring lesions which do not respond to intensive local wound care and use of systemic drugs, especially in cases which need prolonged steroid use, to avoid the side effects; because the well monitored HBO treatment has the least side effects. Hyperbaric oxygen therapy oxygen if used in conjunction with local wound care, antibiotics and surgery will give the best results in problem cases.

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